The Sustainable Seas Expeditions: ocean exploration and public education

"In the spirit of Lewis and Clark as they embarked on a journey to explore this continent some 200 years ago, Sustainable Seas Expeditions will explore our nation's aquatic backyard. Few people seem to be aware that there is another North America underwater, one that is as large as the part that is above water and yet remains as unknown and unexplored as distant planets"

Sylvia Earle

A National Geographic Society project in Partnership with NOAA's National Marine Sanctuaries, supported by the Richard and Rhoda Goldman Fund.

What Is It?

A five-year, multimillion dollar private-public effort to build an ocean conservation ethic using new technologies to explore the deep oceans, using our nation's twelve National Marine Sanctuaries as laboratories

Goals

To Achieve:

- Increased recognition and caring for National Marine Sanctuaries, oceans and Great Lakes
- Increased National capacity to conserve and sustain the natural and cultural resources of the ocean and Great Lakes environments
- Established utility of new submersible technologies to enhance natural and cultural resource conservation

Project Phases

Phase I

- Project planning
- Train submersible pilots
- Conduct explorations
- Conduct collaborative research at a subset of Sanctuaries

Phase II

- Continued exploration
- Focus on adding to characterization of Sanctuary habitats
- Conduct collaborative research at additiona Sanctuaries
- Data organization

Phase III

- Limited exploration
- Data analysis & interpretation
- Expand public education efforts
- Recommendations for future explorations

Unique Products

- National Geographic Society films/video
- CD-ROM/multimedia
- Internet website
- Magazine articles/document series
- Materials for educators
- Data & information
- Special maps

What are the Technologies?

DeepWorker,other equipment, e.g., ROVs, other submersibles

DeepWorker

- Length - 8.25 ft.
- Beam - 5.3 ft.
- Height - 4.5 ft.
- Weight - 0.9 tons
- Operating Depth - 2,000 ft.
- Payload - 250 lb.
- Life Support - 106 person hours
- Speed - 3 to 4 knots

DeepWorker Features

- Lightweight/transportable
- Relatively inexpensive
- Extremely maneuverable
- No tether = less drag
- Up to 24 hour missions
- Large viewing dome
- Flexible manipulators
- Easy launch and recovery
- Safety and design pedigree

The People: Expedition Organization

Sylvia Earle

Project Director

- NGS Explorer-in-Residence
- Former NOAA Chief Scientist
- Marine Biologist

Francesca Cava

Project Manager

- Former Director of NOAA's Sanctuary Program
- Marine Research Administrator
- Director of Education Santa Barbara Channel Aquarium

Major Collaborators

Collaborators will help implement or support important tasks/ activities

- U.S. Navy
- Coast Guard
- NASA
- Jason Foundation
- Monterey Bay Aquarium Research Institute
- Mote Marine Lab
- Government Agencies (e.g., EPA)
- Nongovernmental Organizations
- Private Organizations

Mission Plans

- Visit all Sanctuaries in the 1st year
  - ✓ two-week stay
  - ✓ approximately 8 dive days per site
  - ✓ multiple dives per day
- Conduct baseline explorations
- Train local researchers to conduct independent exploration and research

Anatomy of a Mission

Pre-Mission Operations

- On-site research identified
- Training completed
- Plans in-place:
  - Education/Outreach
  - Media
  - Safety & Operations
  - Cruise

Mission

- Decision to deploy
- Baseline exploration
- Research activities
- Daily reports & debriefing
- Prep for next deployment

Post-Mission Operations

- Reports completed
- Press releases
- Data synthesis & organization
- Coordination with scientists
- Prep for next site

Schedule Through 1999

April 1998 - April 1999

- Project planning
- Identify collaborative research projects
- Train submersible pilots
- Testing/dry-runs

Deployment Schedule: January 1999 - November 1999

American Samoa: 1/19-22 (SCUBA)

Monterey: 4/01-19

Channel Islands: 4/20-5/07

Gulf of the Farallones: 5/08-25

Cordell Bank: 5/25-6/10

Olympic Coast: Late June - Early July

Monitor: 7/14-21

Gray's Reef: 7/27-8/10

Flower Garden: 8/15-30

Thunder Bay: August (SCUBA)

Florida Keys: September

Stellwagen: October

Hawaiian Humpback Whale: November

Where are We Now?

- Website August 26, 1998<*www.nationalgeographic.com*>
- Selection of collaborative research projects underway
- Technical Advisory Committee meeting September 9, 1998
- Training for submersible pilots in Monterey, October 1998
- Comprehensive Project Plan under development
- Safety & Operations Plan under development
- Science Plan under development
- Draft Education Plan completed

Concluding Comment

The Sustainable Seas Expeditions has the potential to produce stunning scientific discoveries and extraordinary educational experiences for millions of people. The data we gather will provide stronger foundations for marine research and for more sound conservation policies. Through new knowledge, we have the opportunity to create a "sea change" in how Americans perceive - care about - their coastal areas and ocean resources.

John Fahey
President
National Geographic Society